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SUPPLEMENTAL MATERIALS

Common pregnancy complications and risk of childhood obesity - influence of maternal obesity: An individual participant data meta-analysis

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Figure S1. Flow chart of participating cohorts and individuals.

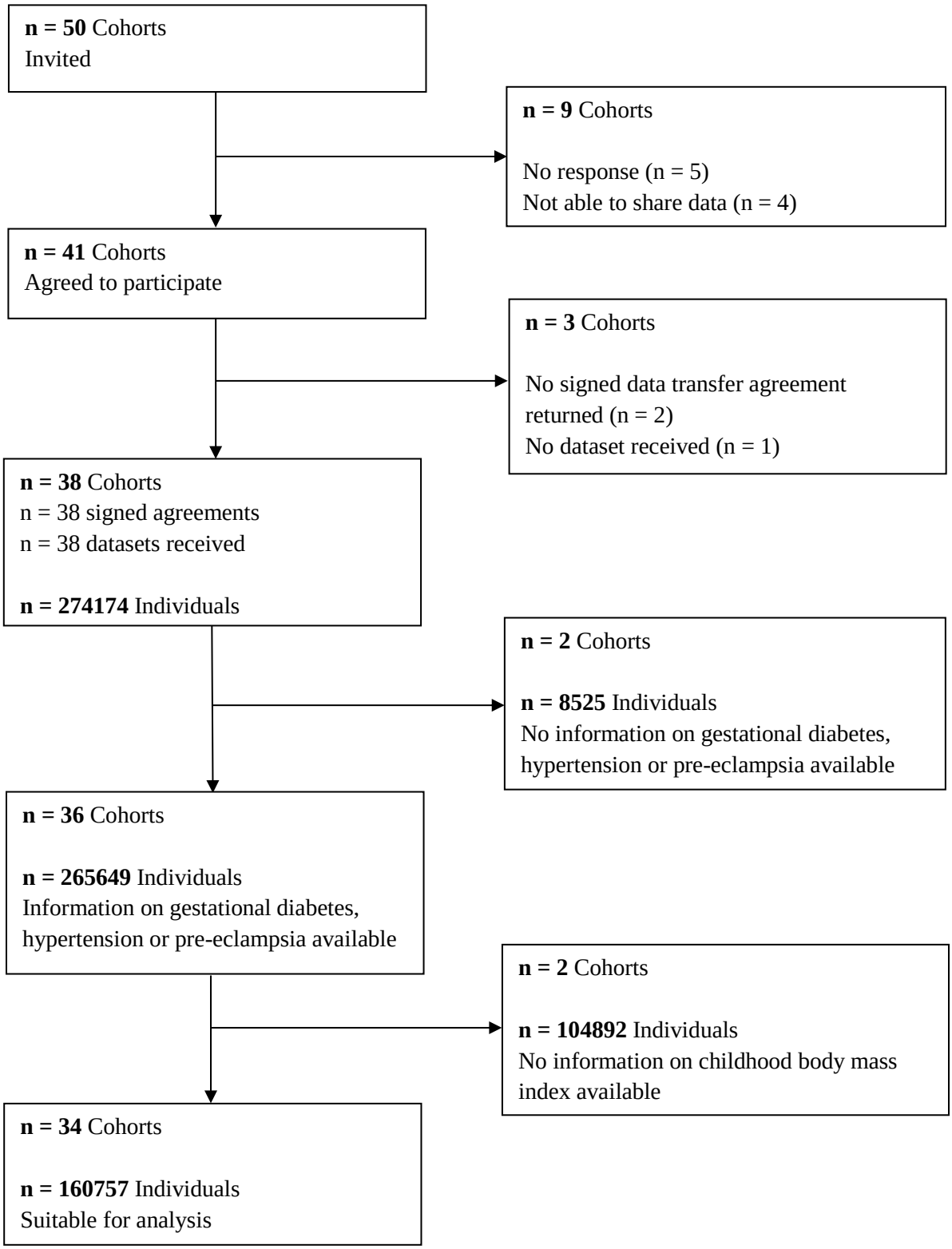


Table S1. Cohort-specific methods of data collection for pregnancy complications, maternal and childhood anthropometrics, and other covariates.[a]

Cohort name (country)	Gestational diabetes	Gestational hypertension	Pre-eclampsia	Childhood weight and height	Maternal height	Maternal pre-/early pregnancy weight	Other covariates
ABCD (The Netherlands)	Self-reported or medical records	Self-reported or medical records	Self-reported or medical records	Measured	Self-reported	Self-reported	Self-reported or medical records
ALSPAC (United Kingdom)	Medical records	Medical records	Medical records	Measured	Self-reported	Self-reported	Self-reported/ medical records
AOB/F (Canada)	Medical records	Medical records	Medical records	Reported	Self-reported	Self-reported	Self-reported
BAMSE (Sweden)	Medical Birth Registry	Medical Birth Registry	Medical Birth Registry	Measured	Medical Birth Registry	Medical Birth Registry	Self-reported
BIB (United Kingdom)	OGT test at 27-28 weeks	Medical records	Medical records	Measured	Measured	Measured	Self-reported or medical records
Co.N.ER (Italy)	Self-reported	Self-reported	Self-reported	Reported	Self-reported	Self-reported	Self-reported
DNBC (Denmark)	Self-reported	Self-reported	Medical records	Reported or measured	Self-reported	Self-reported	Self-reported
EDEN (France)	OGT test and medical records	Clinical examination at 24 weeks of gestation and medical records	Medical records	Measured or medical records	Measured	Self-reported	Self-reported
FCOU (Ukraine)	Medical records	Medical records	Medical records	Medical records	Medical records	Medical records	Self-reported or medical records
GASPII (Italy)	Self-reported	Self-reported	Self-reported	Measured	Self-reported	Self-reported	Self-reported
GECKO Drenthe (The Netherlands)	Self-reported	Self-reported	Self-reported	Measured	Self-reported	Self-reported	Self-reported
GENERATION R (The Netherlands)	Medical records or self-reported	Medical records or self-reported	Medical records or self-reported	Measured	Measured	Self-reported	Self-reported
GENERATION XXI (Portugal)	Medical records	Medical records	Medical records	Measured	Measured/ID card	Self-reported	Self-reported
GENESIS (Greece)	Self-reported	Self-reported	NA	Measured	Self-reported	Self-reported	Self-reported
GINIplus (Germany)	Self-reported	NA	NA	Medical records at 4y, measured and reported at 10 and 15y	Self-reported	Self-reported	Self-reported
HUMIS (Norway)	Medical birth registry	Medical birth registry	Medical birth registry	Reported	Self-reported	Self-reported	Medical birth registry or self-reported
INMA (Spain)	Medical records	Medical records	Medical records	Measured	Measured or self-reported	Self-reported	Self-reported
KOALA (The Netherlands)	Self-reported or medical records	Self-reported or medical records	Self-reported or medical records	Reported	Self-reported	Self-reported	Self-reported
Krakow Cohort (Poland)	Self-reported	Self-reported	Self-reported	Measured	Self-reported	Self-reported	Self-reported or medical records
LISAplus (Germany)	Self-reported	NA	NA	Medical records at 4y, measured and reported at 10 and 15y	Self-reported	Self-reported	Self-reported
MoBa (Norway)	Medical records	Medical records	Medical records	Reported	Self-reported	Self-reported	Self-reported
NINFEA (Italy)	Self-reported	Self-reported	Self-reported	Reported	Self-reported	Self-reported	Self-reported

Table S1. Cohort-specific methods of data collection for pregnancy complications, maternal and childhood anthropometrics, and other covariates (continued).[a]

Cohort name (country)	Gestational diabetes	Gestational hypertension	Pre-eclampsia	Childhood weight and height	Maternal height	Maternal pre-/early pregnancy weight	Other covariables
PÉLAGIE (France)	Medical records	Medical records	Medical records	Reported	Self-reported	Self-reported	Self-reported
PIAMA (The Netherlands)	Self-reported	Self-reported	Self-reported	Reported and measured (4 and 8y)	Self-reported	Self-reported	Self-reported
Piccolipiù (Italy)	Self-reported	Self-reported	Self-reported	Measured	Self-reported	Self-reported	Self-reported
Project Viva (United States)	Medical records	Medical records	Medical records	Measured	Self-reported	Self-reported	Self-reported
REPRO_PL (Poland)	Medical records	Medical records	Medical records	Measured	Measured	Self-reported	Self-reported or measured
RHEA (Greece)	Self-reported	Measured or self-reported	Self-reported	Medical records or measured	Measured	Self-reported	Self-reported
ROLO (Ireland)	Medical records	NA	NA	Measured	Measured	Measured	Self-reported or measured
SCOPEBASELINE (Ireland)	Measured	Measured	Measured	Measured	Measured	Measured	Self-reported
SEATON (United Kingdom)	NA	Medical records	Medical records	Measured	Measured	Measured	Self-reported or medical records
Slovak PCB study (Slovakia)	Self-reported	Self-reported	Self-reported	Measured	Self-reported	Self-reported	Self-reported
STEPS (Finland)	Medical records	Medical records	Medical records	Measured	Self-reported	Self-reported	Self-reported
SWS (United Kingdom)	Medical records	Medical records	Medical records	Measured	Measured	Measured	Self-reported or medical records

[a] Self-reported/reported refers to data obtained either by questionnaire or by interview. NA, not available. OGT, Oral glucose tolerance

Table S2. Characteristics of available covariates per cohort.[a]

Cohort name, number of participants, (country)	Maternal Age, (years)		Parity, n (%)		Maternal Education Level, n (%)				Ethnicity, n (%)		Smoking during pregnancy, n (%)		Maternal pre/early-pregnancy BMI, (kg/m^2)		Offspring Sex, n (%)	
	Median (95% range)	Missings	Nulliparous	Missings	Low	Medium	High	Missings	European/ White	Missings	Yes	Missings	Median (95% range)	Missings	Male	Missings
ABCD, n=5512, (The Netherlands)	32·0 (20·0, 40·0)	-	3041 (55·2)	-	1147 (20·8)	2029 (36·8)	2295 (41·6)	41 (0·7)	4095 (74·3)	10 (0·2)	605 (11·0)	269 (4·9)	22·2 (17·9, 33·9)	18 (0·3)	2737 (49·7)	-
ALSPAC, n=9041, (United Kingdom)	29·0 (20·0, 38·0)	635 (7·0)	3969 (43·9)	361 (4·0)	5142 (56·9)	2165 (23·9)	1284 (14·2)	450 (5·0)	8386 (92·8)	477 (5·3)	1849 (20·5)	234 (2·6)	22·2 (18·0, 33·6)	635 (7·0)	4583 (50·7)	-
AOB/F, n=1672, (Canada)	31·0 (22·0, 40·0)	34 (2·0)	844 (50·5)	-	132 (7·9)	1262 (75·5)	275 (16·4)	3 (0·2)	1374 (82·2)	2 (0·1)	144 (8·6)	92 (5·5)	23·0 (18·0, 38·2)	19 (1·1)	884 (52·9)	-
BAMSE, n=3329, (Sweden)	30·0 (22·0, 40·0)	-	1861 (55·9)	-	1103 (33·1)	833 (25·0)	1376 (41·3)	17 (0·5)	2904 (87·2)	233 (7·0)	420 (12·6)	-	22·3 (18·2, 31·6)	399 (12)	1688 (50·7)	-
BIB, n=983, (United Kingdom)	27·0 (18·0, 39·0)	1 (0·1)	384 (39·1)	15 (1·5)	241 (24·5)	371 (37·7)	369 (37·5)	2 (0·2)	401 (40·8)	-	144 (14·6)	1 (0·1)	24·7 (17·6, 39·4)	96 (9·8)	462 (47·0)	-
Co.N.ER, n=528, (Italy)	33·9 (25·5, 42·1)	1 (0·2)	235 (44·5)	2 (0·4)	82 (15·5)	240 (45·5)	205 (38·8)	1 (0·2)	524 (99·2)	-	67 (12·7)	-	21·2 (17·7, 30·4)	6 (1·1)	265 (50·2)	-
DNBC, n=40349, (Denmark)	30·3 (22·9, 39·3)	-	19992 (49·5)	26 (0·1)	3107 (7·7)	14694 (36·4)	22428 (55·6)	120 (0·3)	NA	NA	9641 (23·9)	14 (0·0)	22·5 (18·1, 33·6)	712 (1·8)	20749 (51·4)	-
EDEN, n=1139, (France)	29·9 (21·0, 39·7)	-	727 (53·4)	3 (0·2)	313 (23·0)	248 (18·2)	793 (58·3)	7 (0·5)	NA	NA	310 (22·8)	10 (0·7)	22·1 (17·4, 34·8)	31 (2·3)	721 (53·0)	-
FCOU, n=2332, (Ukraine)	23·0 (17·0, 36·0)	-	1495 (64·1)	181 (7·8)	127 (5·4)	1534 (65·8)	528 (22·6)	143 (6·1)	2332 (100·0)	-	178 (7·6)	138 (5·9)	21·8 (17·3, 32·0)	235 (10·1)	1218 (52·2)	-
GASPII, n=570, (Italy)	33· 0 (24·0, 41·0)	-	326 (57·2)	-	78 (13·7)	284 (49·8)	208 (36·5)	-	565 (99·1)	1 (0·2)	64 (11·2)	-	21·3 (17·6, 31·1)	2 (0·4)	294 (51·6)	-
GECKO Drenthe, n=2119 (The Netherlands)	31·0 (22·0, 39·0)	1 (0·0)	793 (37·4)	135 (6·4)	1258 (59·4)	750 (35·4)	-	111 (5·2)	1977 (93·3)	96 (4·5)	288 (13·6)	38 (1·8)	23·7 (18·6, 36·7)	157 (7·4)	1062 (50·1)	-
GENESIS, n=2145, (Greece)	30·2 (20·9, 39·0)	197 (9·2)	1200 (56·0)	-	94 (4·4)	989 (46·2)	804 (37·5)	256 (11·9)	NA	NA	350 (16·3)	207 (9·7)	21·8 (17·6, 30·9)	245 (11·4)	1116 (52·1)	-
GENERATION R n=7550, (The Netherlands)	31·0 (19·8, 39·8)	-	4101 (54·3)	149 (2·0)	667 (8·8)	3025 (40·1)	3138 (41·6)	720 (9·5)	4412 (58·4)	289 (3·8)	1600 (21·2)	942 (12·5)	22·8 (18·1, 34·9)	908 (12·0)	3788 (50·2)	-
GENERATION XXI, n=5921, (Portugal)	30·0 (18·0, 40·0)	-	3395 (57·3)	88 (1·5)	1768 (29·9)	2588 (43·7)	1537 (26·0)	28 (0·5)	NA	NA	1285 (21·7)	58 (1·0)	23·0 (18·2, 34·7)	8 (0·1)	3027 (51·1)	-
GINIplus, n=2313, (Germany)	31·0 (24·0, 40·0)	-	NA	NA	276 (11·9)	977 (42·4)	1054 (45·6)	6 (0·3)	NA	NA	257 (11·1)	28 (1·2)	22·0 (18·0, 31·4)	6 (0·3)	1137 (49·2)	-
HUMIS, n=970, (Norway)	30·0 (22·0, 39·0)	-	425 (43·8)	-	96 (9·9)	153 (15·8)	568 (58·6)	153 (15·8)	723 (74·5)	159 (16·4)	97 (10·0)	43 (4·4)	23·3 (18·3, 35·0)	25 (2·6)	488 (50·30)	-
INMA, n=1933, (Spain)	30·0 (22·0, 39·0)	1 (0·1)	1056 (54·6)	2 (0·1)	583 (30·2)	736 (38·1)	594 (30·7)	20 (1·0)	1846 (95·5)	3 (0·2)	341 (17·6)	14 (0·7)	22·5 (18·0, 34·6)	22 (1·1)	992 (51·3)	-
KOALA, n=2061, (The Netherlands)	32·0 (25·0, 40·0)	2 (0·1)	899 (43·6)	43 (2·1)	178 (8·6)	760 (36·9)	1026 (49·8)	97 (4·7)	1993 (96·7)	6 (0·3)	122 (5·9)	6 (0·3)	22·8 (18·5, 33·5)	10 (0·5)	1059 (51·4)	-
Krakow Cohort, n=424, (Poland)	27·5 (20·0, 34·0)	-	270 (63·7)	-	40 (9·4)	161 (38·0)	223 (52·6)	-	424 (100)	-	-	-	21·1 (17·3, 28·0)	2 (0·5)	217 (51·2)	-

Table S2. Characteristics of available covariates per cohort (continued).[a]

Cohort name, number of participants, (country)	Maternal Age, (years)		Parity, n (%)		Maternal Education Level, n (%)				Ethnicity, n (%)		Smoking during Pregnancy, n (%)		Maternal pre/early-pregnancy BMI, (kg/m^2)		Offspring Sex, n (%)	
	Median (95% range)	Missings	Nulliparous	Missings	Low	Medium	High	Missings	European/ White	Missings	Yes	Missings	Median (95% range)	Missings	Male	Missings
LISAplus, n=1584, (Germany)	32·0 (23·0, 40·0)	-	687 (43·4)	5 (0·3)	96 (6·2)	565 (35·7)	908 (57·3)	13 (0·8)	NA	NA	202 (12·8)	7 (0·4)	21·7 (17·8, 32·2)	2 (0·1)	829 (52·3)	-
MoBa, n=55008, (Norway)	30·0 (22·0, 39·0)	-	25506 (46·4)	-	14936 (27·2)	24284 (44·1)	14739 (26·8)	1049 (1·9)	NA	NA	3955 (7·2)	5445 (9·9)	23·1 (18·4, 34·7)	98 (0·2)	28200 (51·30)	-
NINFEA, n=1726, (Italy)[b]	33·0 (25·0, 41·0)	-	1172 (67·9)	1 (0·1)	65 (3·8)	575 (33·3)	1067 (61·8)	19 (1·1)	1703 (98·7)	-	137 (7·9)	25 (1·4)	21·4 (17·3, 31·9)	50 (2·9)	880 (51·0)	-
PÉLAGIE, n=738, (France)	30·1 (22·7, 39·5)	-	326 (44·2)	2 (0·3)	106 (14·4)	128 (17·3)	503 (68·2)	1 (0·1)	NA	NA	198 (26·8)	1 (0·1)	21·7 (17·5, 32·4)	6 (0·8)	381 (51·6)	-
PIAMA, n=1815, (The Netherlands)	31·0 (24·0, 38·0)	5 (0·3)	926 (51·0)	-	300 (16·5)	757 (41·7)	754 (41·5)	4 (0·2)	1745 (96·1)	24 (1·3)	243 (13·4)	11 (0·6)	22·2 (18·3, 30·8)	113 (6·2)	918 (50·6)	-
Piccolipiù, n=687, (Italy)	34·0 (24·0, 43·0)	-	430 (62·6)	-	69 (10·0)	263 (38·3)	354 (51·5)	1 (0·1)	678 (98·7)	1 (0·1)	156 (22·7)	-	21·6 (17·6, 31·8)	2 (0·3)	361 (52·5)	-
Project Viva, n=1389, (United States)	32·4 (18·9, 41·2)	-	664 (47·8)	-	437 (31·5)	487 (35·1)	458 (33·0)	7 (0·5)	954 (68·7)	7 (0·5)	144 (10·4)	31 (2·2)	23·5 (18·3, 38·2)	10 (0·7)	711 (51·2)	-
REPRO_PL, n=291, (Poland)	28·0 (20·0, 37·0)	3 (1·0)	167 (57·4)	-	32 (11·0)	102 (35·1)	157 (54·0)	-	291 (100)	-	34 (11·7)	-	21·6 (17·2, 32·8)	8 (2·7)	139 (47·8)	-
RHEA, n=740, (Greece)	30·0 (20·0, 40·0)	3 (0·4)	NA	NA	105 (14·2)	386 (52·2)	242 (32·7)	7 (0·9)	739 (99·9)	1 (0·1)	256 (34·6)	-	23·4 (18·0, 36·4)	10 (1·4)	396 (53·5)	-
ROLO, n=283, (Ireland)	33·3 (24·7, 40·4)	-	-	-	-	50 (17·7)	204 (72·1)	29 (10·2)	280 (98·8)	-	6 (2·1)	-	25·2 (20·0, 38·7)	3 (1·1)	131 (46·3)	-
SCOPEBASELINE, n=1046, (Ireland)	31·0 (22·0, 39·0)	-	1046 (100·0)	-	-	122 (11·7)	921 (88·3)	3 (0·3)	1033 (98·8)	-	229 (21·9)	-	24·0 (19·2, 34·7)	1 (0·1)	531 (50·8)	-
SEATON, n=872, (United Kingdom)	30·4 (19·5, 39·6)	-	324 (37·2)	-	185 (21·2)	251 (28·8)	340 (39·0)	96 (11·0)	NA	NA	317 (36·4)	-	23·9 (18·8, 37·7)	1 (0·1)	439 (50·3)	-
Slovak PCB study, n=524, (Slovakia)	26·0 (19·0, 38·0)	-	208 (39·7)	1 (0·2)	235 (44·8)	254 (48·5)	31 (5·9)	4 (0·8)	436 (83·2)	-	81 (15·5)	20 (3·8)	21·2 (16·7, 31·6)	44 (8·4)	260 (49·6)	-
STEPS, n=297, (Finland)	31·5 (24·2, 40·4)	-	179 (60·3)	-	15 (5·1)	87 (29·3)	193 (65·0)	2 (0·7)	NA	NA	10 (3·4)	2 (0·7)	22·6 (18·3, 34·3)	1 (0·3)	148 (49·8)	-
SWS, n=2646, (United Kingdom)	30·2 (22·7, 36·4)	738 (27·9)	1394 (52·7)	3 (0·1)	292 (11·0)	1578 (59·6)	769 (29·1)	7 (0·3)	2545 (96·2)	1 (0·0)	335 (12·7)	287 (10·8)	24·1 (18·9, 37·4)	25 (0·9)	1367 (51·7)	-

[a]NA, not available; "-" for missings refers to data available in all participants (no missings); [b]Subset of participants with 4-years follow-up completed.
[c]Distinguishes between those born in Italy and those born outside Italy.

Table S3. Associations of gestational diabetes, pre-eclampsia and gestational hypertension with offspring BMI in early, mid, and late childhood: models with categorical or continuous maternal BMI and age.

	Childhood BMI in standard-deviation scores Difference (95% Confidence Interval)		
	Early childhood 2.0-4.9y	**Mid childhood 5.0-9.9y**	**Late childhood 10.0-17.9y**
Model with categorical maternal BMI and age			
Gestational diabetes	0.05 (0.00, 0.10)	0.08 (0.03, 0.13)	-0.09 (-0.22, 0.03)
Pre-eclampsia	-0.12 (-0.16, -0.07)	-0.01 (-0.05, 0.02)	0.00 (-0.14, 0.14)
Gestational hypertension	0.01 (-0.03, 0.06)	0.03 (0.00, 0.06)	0.07 (0.00, 0.13)
Model with continuous maternal BMI and age			
Gestational diabetes	0.03 (-0.02, 0.08)	0.04 (-0.01, 0.09)	-0.12 (-0.24, 0.00)
Pre-eclampsia	-0.14 (-0.18, -0.09)	-0.04 (-0.07, 0.00)	-0.07 (-0.21, 0.06)
Gestational hypertension	-0.01 (-0.05, 0.04)	0.00 (-0.03, 0.03)	0.01 (-0.05, 0.08)

Values are regression coefficients (95% confidence intervals) from multilevel linear mixed effects models that reflect differences in early childhood (2·0 to 4·9 years), mid childhood (5·0 to 9·9 years) and late childhood (10·0 to 17·9 years) BMI SDS for children born to mothers with pregnancy complication, as compared with the reference group (children born to mothers with an uncomplicated pregnancy). Models are adjusted for offspring's sex, maternal age, educational level, ethnicity, parity, smoking during pregnancy and pre-/early-pregnancy BMI.

Table S4. Characteristics of the participating pregnancy and birth cohorts (n=160757).[a]

Cohort name, number of participants, (country)	Age (months)			Body mass index (kg/m^2)		
	Early childhood (2·0-4·9y)	Mid childhood (5·0-9·9y)	Late childhood (10·0-17·9y)	Early childhood (2·0-4·9y)	Mid childhood (5·0-9·9y)	Late childhood (10·0-17·9y)
ABCD, n=5512, (The Netherlands)	47·2 (25·5, 54·3)	68·2 (61·6, 82·2)	NA	15·7 (13·5, 19·1)	15·4 (13·2, 19·7)	NA
ALSPAC, n=9041, (United Kingdom)	48·7 (30·8,49·6)	115·0 (88·0, 119·0)	165·0 (125·0, 171·0)	16·2 (14·0, 19·2)	16·5 (13·7, 23·8)	19·4 (15·1, 29·0)
AOB/F, n=1672, (Canada)	36·0(35·0, 42·0)	NA	NA	15·7 (12·9, 19·5)	NA	NA
BAMSE, n=3329, (Sweden)	51·4 (48·2, 57·6)	101·0 (89·0, 109·0)	201·3 (191·7, 210·3)	16·1 (14·0, 19·3)	16·7 (14·1, 22·4)	21·2 (17·1, 28·9)
BIB, n=983, (United Kingdom)	36·8 (35·7, 39·2)	NA	NA	16·1 (13·8, 19·3)	NA	NA
Co.N.ER, n=528, (Italy)	43·9 (34·7, 54·7)	95·0 (86·6, 111·1)	NA	15·7 (12·9, 20·0)	16·9 (14·0, 23·0)	NA
DNBC, n=40349, (Denmark)	NA	85·0 (75·5, 89·5)	NA	NA	15·5 (13·0, 19·6)	NA
EDEN, n=1361, (France)	38·0 (36·9, 39·9)	67·7 (65·0, 72·4)	NA	15·8 (13·8, 18·2)	15·2 (13·3, 18·5)	NA
FCOU, n=2332, (Ukraine)	35·0 (24·0, 40·0)	84·0 (75·0, 93·0)	193·0 (183·0, 209·1)	16·3 (13·1, 20·5)	15·4 (12·9, 19·4)	20·4 (16·3, 27·5)
GASPII, n=570, (Italy)	50·0 (43·0, 53·0)	104·0 (98·0, 113·0)	NA	16·3 (14·0, 20·0)	17·1 (13·8, 23·5)	NA
GECKO Drenthe, n=2119, (The Netherlands)	NA	70·4 (62·5, 78·6)	NA	NA	15·8 (13·8, 19·7)	NA
GENESIS, n=2145, (Greece)	43·9 (26·2, 58·1)	62·1 (60·0, 72·1)	NA	16·5 (13·9, 21·4)	16·6 (13·5, 23·2)	NA
GENERATION R, n=7550,(The Netherlands)	45·8 (44·5, 48·6)	115·2 (69·4, 119·4)	122·1 (120·1, 137·8)	15·7 (13·5, 19·2)	16·5 (13·8, 23·8)	17·4 (14·3, 25·5)
GENERATION XXI, n=5921, (Portugal)	50·0 (46·0, 58·0)	85·0 (83·0, 95·0)	NA	16·0 (13·7, 20·6)	16·5 (13·7, 23·5)	NA
GINIplus, n=2313, (Germany)	48·0 (44·0, 52·0)	62·9 (60·1, 75·0)	182·0 (177·0, 191·0)	15·4 (13·2, 18·2)	15·3 (13·1, 18·6)	20·1 (16·0, 27·7)
HUMIS, n=970, (Norway)	25·6 (24·0, 37·3)	84·0 (60·0, 92·0)	NA	16·1 (13·5, 19·2)	15·5 (12·8, 19·7)	NA
INMA, n=1933, (Spain)	52·9 (49·0, 56·5)	83·7 (75·2, 94·5)	174·5 (171·9, 181·5)	16·0 (13·7, 20·0)	16·4 (13·6, 23·5)	20·6 (16·4, 30·3)
KOALA, n=2061, (The Netherlands)	55·5 (48·1, 59·8)	106·0 (61·5, 119·3)	121·4 (120·0, 126·7)	15·1 (12·8, 18·1)	15·6 (13·0, 20·2)	16·2 (13·1, 22·7)
Krakow Cohort, n=424, (Poland)	48·0 (36·0, 51·2)	108·0 (60·0, 111·0)	NA	15·3 (12·9, 18·7)	16·2 (13·5, 22·4)	NA
LISAplus, n=1584, (Germany)	48·0 (44·0, 52·0)	62·7 (60·1, 73·5)	181·0 (173·0, 190·0)	15·4 (13·2, 18·2)	15·1 (13·1, 18·1)	19·9 (16·0, 28·0)
MoBa, n=55008, (Norway)	36·4 (25·4, 59·9)	86·9 (60·9, 100·9)	121·9 (120·9, 122·9)	15·9 (13·2, 19·2)	15·7 (12·9, 20·6)	NA
NINFEA, n=1726, (Italy)	49·7 (48·3, 57·0)	86·1 (84·8, 93·0)	NA	15·4 (12·6, 19·5)	15·4 (12·8, 20·8)	NA
PÉLAGIE, n=738, (France)	24·4 (24·0, 26·4)	NA	NA	16·0 (13·9, 18·7)	NA	NA
PIAMA, n=1815, (The Netherlands)	49·1 (44·3, 54·2)	97·5 (90·8, 109·8)	195·9 (192·4, 203·1)	16·2 (13·9, 19·4)	16·0 (13·5, 21·7)	20·3 (16·8, 27·4)
Piccolipiù, n=687, (Italy)	24·0 (24·0, 28·0)	NA	NA	16·2 (13·4, 19·6)	NA	NA
Project Viva, n=1389, (United States)	37·9 (36·1, 50·2)	92·2 (82·5, 116·5)	123·8 (120·6, 131·1)	16·3 (14·2, 19·5)	16·4 (13·7, 24·4)	18·0 (14·3, 32·9)
REPRO_PL, n=291, (Poland)	25·0 (24·0, 31·0)	88·0 (84·2, 94·0)	NA	16·2 (13·2, 19·6)	16·7 (13·3, 25·2)	NA
RHEA, n=740, (Greece)	49·8 (48·0, 57·8)	NA	NA	16·1 (13·8, 21·3)	NA	NA
ROLO, n=283, (Ireland)	24·7 (24·0, 34·9)	NA	NA	16·0 (13·8, 19·9)	NA	NA
SCOPE BASELINE, n=1046, (Ireland)	25·5 (24·5, 28·9)	NA	NA	16·6 (14·5, 19·3)	NA	NA
SEATON, n=872, (United Kingdom)	58·6 (55·9, 59·9)	61·2 (60·0, 119·7)	180·1 (121·5, 186·1)	16·2 (14·1, 19·6)	16·2 (13·9, 20·0)	20·7 (15·2, 31·0)
Slovak PCB study, n=524, (Slovakia)	45·4 (44·8, 49·7)	93·0 (85·0, 101·0)	NA	18·1 (12·5, 24·9)	16·1 (13·3, 24·1)	NA
STEPS, n=297, (Finland)	36·8 (35·7, 38·4)	NA	NA	16·2 (14·2, 18·8)	NA	NA
SWS, n=2646, (United Kingdom)	38·4 (35·6, 50·7)	80·4 (74·7, 87·1)	NA	16·0 (13·8, 19·3)	15·7 (13·4, 20·8)	NA

[a]Values are expressed as medians (95% range). NA, not available.

Table S5. Gestational hypertension, pre-eclampsia, gestational diabetes and the odds ratios of underweight (compared with normal weight) in early, mid, and late childhood.

	Underweight vs normal weight Odds Ratios (95% Confidence Interval)		
	Early childhood 2·0-4·9y	**Mid childhood 5·0-9·9y**	**Late childhood 10·0-17·9y**
Basic model			
No gestational hypertension and pre-eclampsia	Reference $n_{cases/total}$ = 1099/64157	Reference $n_{cases/total}$ = 2057/82925	Reference $n_{cases/total}$ = 175/7166
Gestational hypertension	0·83 (0·57, 1·21) $n_{cases/total}$ =29/2487	0·65 (0·49, 0·86) $n_{cases/total}$ = 50/3650	0·60 (0·35, 1·05) $n_{cases/total}$ =14/871
Pre-eclampsia	1·33 (1·01, 1·75) $_{cases/total}$ = 55/2297	1·10 (0·88, 1·38) $n_{cases/total}$ = 80/2806	0·35 (0·09, 1·43) $n_{cases/total}$ = 2/230
No gestational diabetes	Reference $n_{cases/total}$ = 1255/76340	Reference $n_{cases/total}$ = 2237/94444	Reference $n_{cases/total}$ =287/13029
Gestational diabetes	0·76 (0·48, 1·21) $n_{cases/total}$ =19/1681	0·80 (0·49, 1·32) $n_{cases/total}$ =16/1192	0·72 (0·23, 2·26) $n_{cases/total}$ =3/197

Values are odds ratios (95% confidence intervals) from multilevel binary logistic mixed effects models that reflect the odds of underweight in early, mid and late childhood for offspring exposed to gestational diabetes, gestational hypertension or pre-eclampsia, compared with the reference group (no gestational diabetes/ no gestational hypertension and pre-eclampsia). Results are unadjusted (Basic model). We were unable to further explore adjustment for maternal BMI because of small numbers.

Table S6. Gestational hypertension, pre-eclampsia, gestational diabetes and the odds ratios of overweight and obesity (compared with normal weight) in early, mid, and late childhood: maternal BMI model and models additionally adjusted for gestational diabetes or gestational hypertension and pre-eclampsia.

	Overweight and obesity vs normal weight Odds Ratios (95% Confidence Interval)		
	Early childhood 2.0-4.9y	**Mid childhood 5.0-9.9y**	**Late childhood 10.0-17.9y**
Maternal BMI model			
Gestational hypertension	1.01 (0.86, 1.19)	1.02 (0.95, 1.10)	1.18 (1.03, 1.36)
Pre-eclampsia	0.87 (0.73, 1.03)	1.04 (0.95, 1.13)	0.98 (0.71, 1.33)
Maternal BMI model additionally adjusted for gestational diabetes			
Gestational hypertension	1.00 (0.86, 1.18)	1.02 (0.94, 1.09)	1.18 (1.03, 1.36)
Pre-eclampsia	0.87 (0.73, 1.03)	1.04 (0.95, 1.13)	0.98 (0.72, 1.34)
Maternal BMI model			
Gestational diabetes	1.35 (1.15, 1.58)	1.12 (1.00, 1.25)	0.96 (0.71, 1.31)
Maternal BMI model additionally adjusted for gestational hypertension and pre-eclampsia			
Gestational diabetes	1.35 (1.15, 1.58)	1.12 (1.00, 1.25)	0.96 (0.71, 1.31)

Values are odds ratios (95% confidence intervals) from multilevel binary logistic mixed effects models that reflect the odds of overweight and obesity in early, mid and late childhood for offspring exposed to gestational diabetes, gestational hypertension or pre-eclampsia, compared with the reference group (no gestational diabetes/ no gestational hypertension and pre-eclampsia). The models are adjusted for offspring's sex, maternal age, educational level, ethnicity, parity, smoking during pregnancy, maternal pre/early-pregnancy BMI (Maternal BMI model), and additionally adjusted for gestational diabetes or gestational hypertension and pre-eclampsia.

Table S7. Associations of gestational diabetes with childhood BMI in early, mid, and late childhood stratified by maternal BMI group.

	Childhood BMI in standard-deviation scores Difference (95% Confidence Interval)		
	Early childhood 2.0-4.9y	**Mid childhood 5.0-9.9y**	**Late childhood 10.0-17.9y**
Maternal underweight	0.09 (-0.20, 0.39)	-0.07 (-0.41, 0.27)	-0.59 (-1.30, 0.13)
Maternal normal weight	0.01 (-0.06, 0.08)	0.04 (-0.02, 0.11)	-0.08 (-0.24, 0.09)
Maternal overweight	0.07 (-0.03, 0.17)	0.07 (-0.03, 0.17)	-0.21 (-0.47, 0.05)
Maternal obesity	0.05 (-0.07, 0.16)	0.12 (0.00, 0.24)	0.24 (-0.12, 0.60)

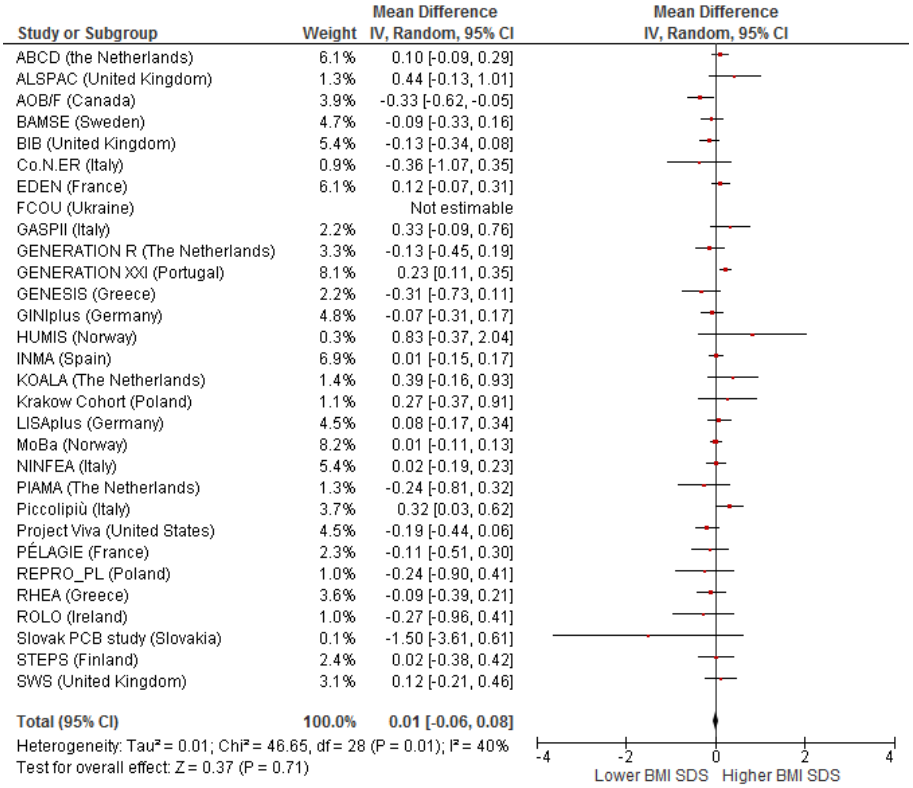
Values are regression coefficients (95% confidence intervals) from multilevel linear mixed effects models that reflect differences in early childhood (2·0 to 4·9 years), mid childhood (5·0 to 9·9 years) and late childhood (10·0 to 17·9 years) BMI SDS for children born to mothers with gestational diabetes, as compared with the reference group (children born to mothers with an uncomplicated pregnancy). Models are adjusted for offspring's sex, maternal age, educational level, ethnicity, parity, and smoking during pregnancy.

Table S8. Associations of gestational diabetes, pre-eclampsia and gestational hypertension with offspring BMI in early, mid, and late childhood: models with pre/early-pregnancy BMI or pre-pregnancy BMI.

	Childhood BMI in standard-deviation scores Difference (95% Confidence Interval)		
	Early childhood 2.0-4.9y	**Mid childhood 5.0-9.9y**	**Late childhood 10.0-17.9y**
Model with pre/early-pregnancy BMI			
Gestational diabetes	0.04 (0.00, 0.09)	0.09 (0.04, 0.13)	-0.07 (-0.19, 0.06)
Pre-eclampsia	-0.11 (-0.16, -0.07)	0.00 (-0.04, 0.03)	0.01 (-0.12, 0.14)
Gestational hypertension	0.01 (-0.03, 0.06)	0.04 (0.01, 0.07)	0.07 (0.01, 0.13)
Model with pre-pregnancy BMI			
Gestational diabetes	0.06 (0.01, 0.11)	0.08 (0.03, 0.13)	-0.06 (-0.20, 0.08)
Pre-eclampsia	-0.12 (-0.16, -0.07)	-0.01 (-0.04, 0.03)	0.01 (-0.14, 0.15)
Gestational hypertension	0.02 (-0.02, 0.06)	0.04 (0.01, 0.07)	0.08 (0.01, 0.15)

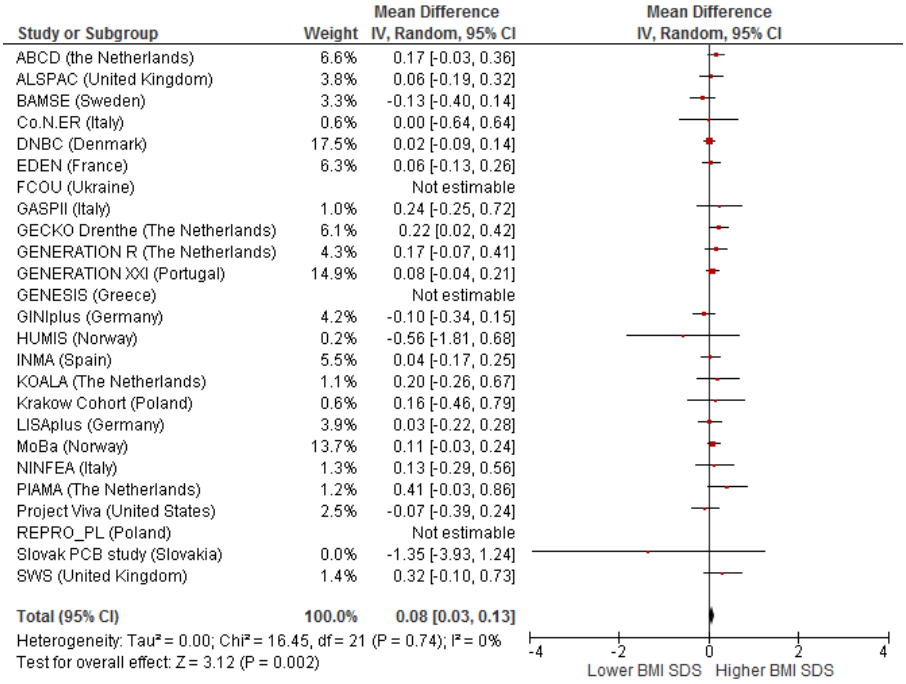
Values are regression coefficients (95% confidence intervals) from multilevel linear mixed effects models that reflect differences in early childhood (2·0 to 4·9 years), mid childhood (5·0 to 9·9 years) and late childhood (10·0 to 17·9 years) BMI SDS for children born to mothers with pregnancy complication, as compared with the reference group (children born to mothers with an uncomplicated pregnancy). Models are adjusted for offspring's sex, maternal age, educational level, ethnicity, parity, smoking during pregnancy and BMI.

Figure S2. 2-stage meta-analysis – association of gestational diabetes with BMI SDS in early childhood.[a]



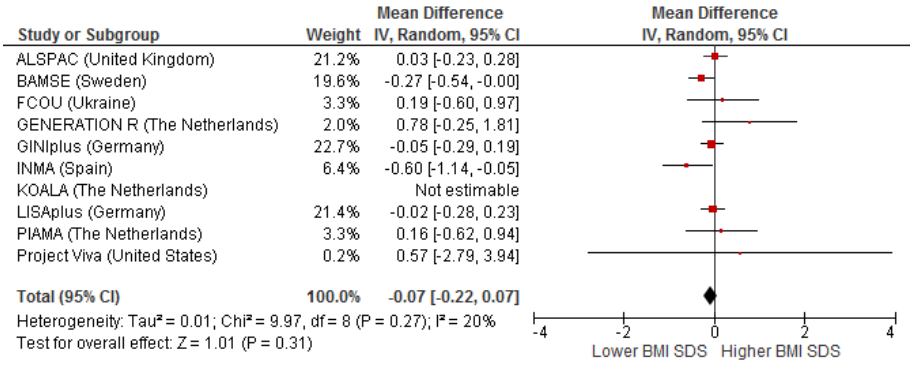
[a]Values are pooled differences (95% Confidence Interval, CI) in early childhood (2.0-4.9 years) BMI SDS in offspring exposed to gestational diabetes as compared to reference group (no gestational diabetes), expressed by regression coefficients. Analyses are based on maternal BMI model.

Figure S3. 2-stage meta-analysis – association of gestational diabetes with BMI SDS in mid childhood.



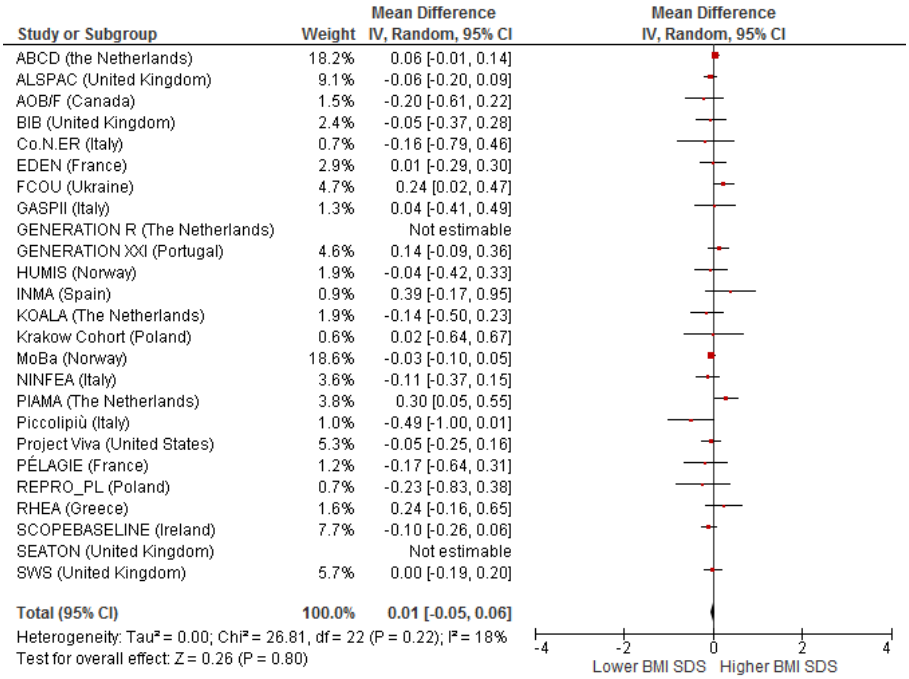
[a]Values are pooled differences (95% Confidence Interval, CI) in mid childhood (5.0-9.9 years) BMI SDS in offspring exposed to gestational diabetes as compared to reference group (no gestational diabetes), expressed by regression coefficients. Analyses are based on maternal BMI model.

Figure S4. 2-stage meta-analysis – association of gestational diabetes with BMI SDS in late childhood.[a]



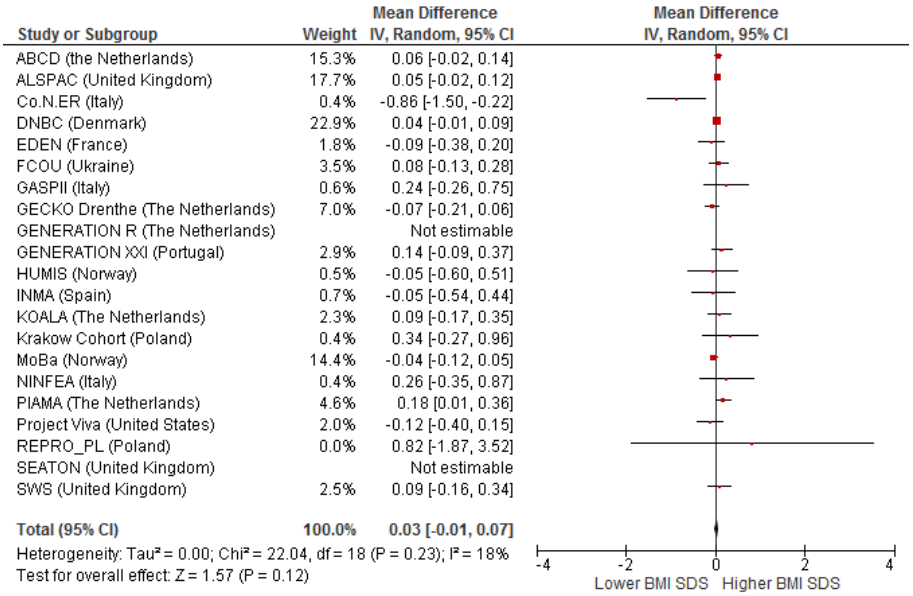
[a]Values are pooled differences (95% Confidence Interval, CI) in late childhood (10.0-17.9 years) BMI SDS in offspring exposed to gestational diabetes as compared to reference group (no gestational diabetes), expressed by regression coefficients. Analyses are based on maternal BMI model.

Figure S5. 2-stage meta-analysis – association of gestational hypertension with BMI SDS in early childhood.[a]



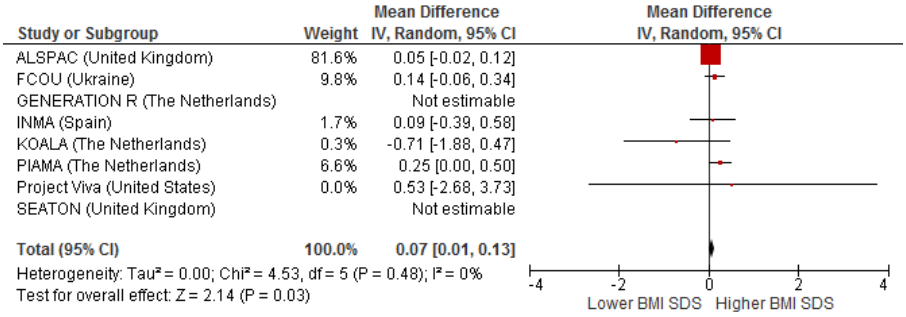
[a]Values are pooled differences (95% Confidence Interval, CI) in early childhood (2.0-4.9 years) BMI SDS in offspring exposed to gestational hypertension as compared to reference group (no gestational hypertension and pre-eclampsia), expressed by regression coefficients. Analyses are based on maternal BMI model.

Figure S6. 2-stage meta-analysis – association of gestational hypertension with BMI SDS in mid childhood.[a]



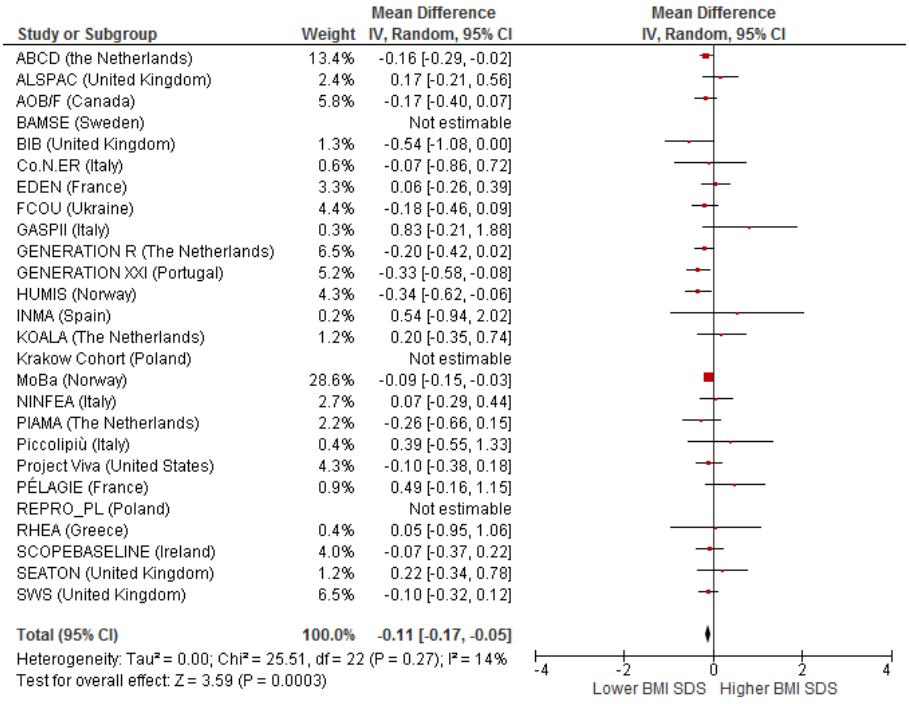
[a]Values are pooled differences (95% Confidence Interval, CI) in mid childhood (5.0-9.9 years) BMI SDS in offspring exposed to gestational hypertension as compared to reference group (no gestational hypertension and pre-eclampsia), expressed by regression coefficients. Analyses are based on maternal BMI model.

Figure S7. 2-staga meta-analysis – association of gestational hypertension with BMI SDS in late childhood.[a]



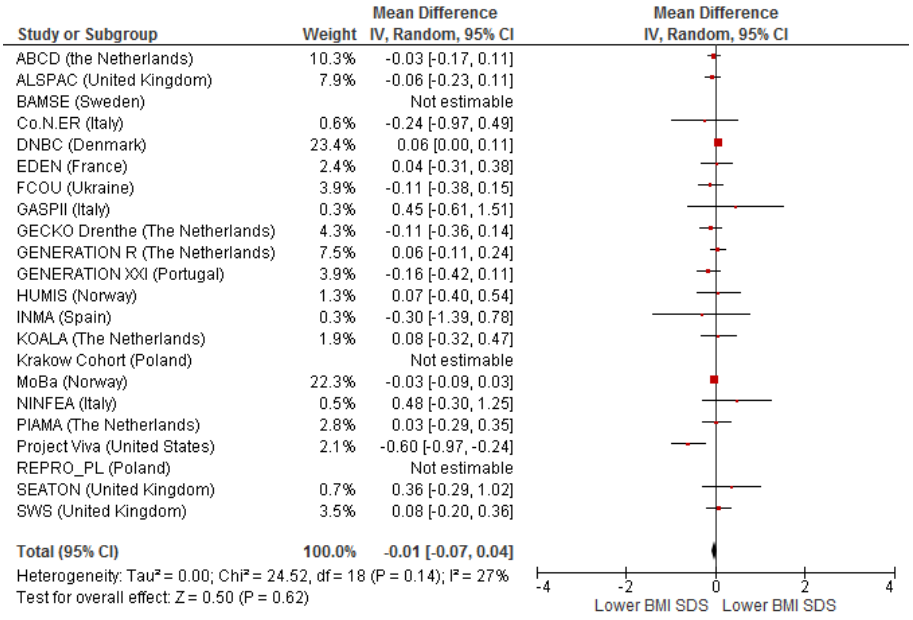
[a]Values are pooled differences (95% Confidence Interval, CI) in late childhood (10.0-17.9 years) BMI SDS in offspring exposed to gestational hypertension as compared to reference group (no gestational hypertension and pre-eclampsia), expressed by regression coefficients. Analyses are based on maternal BMI model.

Figure S8. 2-stage meta-analysis – association of pre-eclampsia with BMI SDS in early childhood.[a]



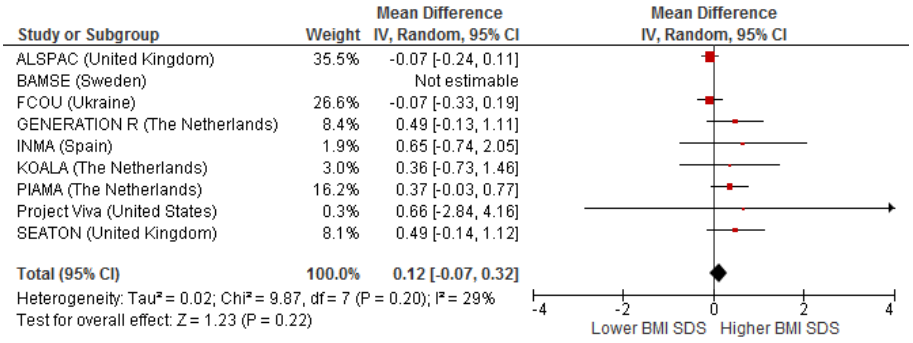
[a]Values are pooled differences (95% Confidence Interval, CI) in early childhood (2.0-4.9 years) BMI SDS in offspring exposed to pre-eclampsia as compared to reference group (no gestational hypertension and pre-eclampsia), expressed by regression coefficients. Analyses are based on maternal BMI model.

Figure S9. 2-stage meta-analysis – association of pre-eclampsia with BMI SDS in mid childhood.[a]



[a]Values are pooled differences (95% Confidence Interval, CI) in mid childhood (5.0-9.9 years) BMI SDS in offspring exposed to pre-eclampsia as compared to reference group (no gestational hypertension and pre-eclampsia), expressed by regression coefficients. Analyses are based on maternal BMI model.

Figure S10. 2-stage meta-analysis – association of pre-eclampsia with BMI SDS in late childhood.[a]



[a]Values are pooled differences (95% Confidence Interval, CI) in late childhood (10.0-17.9 years) BMI SDS in offspring exposed to pre-eclampsia as compared to reference group (no gestational hypertension and pre-eclampsia), expressed by regression coefficients. Analyses are based on maternal BMI model.

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